Rotomold Spa Owner's Manual

United States and Canada

AMERICAN Spas™

MADE IN THE USA

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LTR50001120, Rev. D
6/23/15

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Due to continuous improvement programs, all models, operation, and/or specifications are subject to change without prior notice.

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CONTACT INFORMATION

For customer service, please contact your authorized dealer immediately. If you need additional information and/or assistance, contact:

LMS Customer Service Department
1462 East Ninth Street
Pomona, CA 91766.

Telephone: 800-225-7727 (US and Canada)
Fax: 909-629-3890

Important Safety Instructions

READ AND FOLLOW ALL INSTRUCTIONS.

WARNING:

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

DANGER -- Risk of accidental drowning:

Do not allow children to be in or around a spa unless a responsible adult supervises them. Keep the spa cover on and locked when not in use. See instructions enclosed with your cover for locking procedures.

DANGER -- Risk of injury:

The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings, or the pump, be sure the flow rates are compatible.

Never operate the spa if the suction fitting or filter baskets are broken or missing. Never replace a suction fitting with one that is rated less than the flow rate marked on the original suction fitting.

DANGER -- Risk of electric shock:

Install the spa at least 5 feet (1.5 meters) from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently bonded by a minimum #8 AWG solid copper conductor to the outside of the spa's control box.

DANGER -- Risk of electric shock:

Do not permit any external electrical appliances, such as lights, telephones, radios, televisions, and etc., within five feet (1.5 meters) of the spa. Never attempt to operate any electrical device from inside the spa.

WARNING -- To reduce the risk of injury:

The spa water should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.

High water temperatures have a high potential for causing fetal damage during pregnancy. Women who are pregnant, or who think they are pregnant, should always check with their physician prior to spa usage.

The use of alcohol, drugs or medication before or during spa use may lead to unconsciousness, with the possibility of drowning.

Persons suffering from obesity, a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using the spa.

Persons using medications should consult a physician before using the spa since some medications may induce drowsiness while others may affect heart rate, blood pressure and circulation.

HYPERTHERMIA DANGER:

Prolonged exposure to hot air or water can induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level 3°F to 6°F above the normal body temperature of 98.6°F (or 2°C to 4°C above 37°C). While hyperthermia has many health benefits, it is important not to allow your body's core temperature to rise above 103°F (39.5°C).

Symptoms of excessive hyperthermia include dizziness, lethargy, drowsiness and fainting. The effects of excessive hyperthermia may include:

- Failure to perceive heat
- Failure to recognize the need to exit spa or hot tub
- Unawareness of impending hazard
- Fetal damage in pregnant women
- Physical inability to exit the spa
- Unconsciousness

WARNING: The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.

DANGER -- Risk of electric shock:

- Replace a damaged power cord immediately.
- Do not bury the power cord.
- Connect to a grounded, grounding-type receptacle only.

WARNING: People with infectious diseases should not use a spa or hot tub.

WARNING: To avoid injury, exercise care when entering or exiting the spa or hot tub.

WARNING: Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.

WARNING: Do not use a spa or hot tub immediately following strenuous exercise.

WARNING: Prolonged immersion in a spa or hot tub may be injurious to your health.

CAUTION: Maintain water chemistry in accordance with manufacturer's instructions.

SAVE THESE INSTRUCTIONS.

Preparing for Your New Portable Spa

Pre-Delivery Checklist

Most cities and counties require permits for exterior construction and electrical circuits. In addition, some communities have codes requiring residential barriers such as fencing and/or self-closing gates on property to prevent unsupervised access to the property by children. Your dealer can provide information on which permits may be required and how to obtain them prior to the delivery of your spa.

Before Delivery	
	Plan your delivery route
	Choose a suitable location for the spa
	Lay a 5 - 8 cm concrete slab
	Install dedicated electrical supply
After Delivery	
	Place spa on slab
	Connect electrical components

Planning the Best Location

Safety First

Do not place your spa within 10 feet (3 m) of overhead power lines.

Consider How You Will Use Your Spa

How you intend to use your spa will help you determine where you should position it. For example, will you use your spa for recreational or therapeutic purposes? If your spa is mainly used for family recreation, be sure to leave plenty of room around it for activity. If you will use it for relaxation and therapy, you will probably want to create a specific mood around it.

Plan for Your Environment

If you live in a region where it snows in the winter or rains frequently, place the spa near a house entry. By doing this, you will have a place to change clothes and not be uncomfortable.

Consider Your Privacy

In a cold-weather climate, bare trees won't provide much privacy. Think of your spa's surroundings during all seasons to determine your best privacy options. Consider the view of your neighbors as well when you plan the location of your spa.

Provide a View with Your Spa

Think about the direction you will be facing when sitting in your spa. Do you have a special landscaped area in your yard that you find enjoyable? Perhaps there is an area that catches a soothing breeze during the day or a lovely sunset in the evening.

Keep Your Spa Clean

In planning your spa's location, consider a location where the path to and from the house can be kept clean and free of debris.

Prevent dirt and contaminants from being tracked into your spa by placing a foot mat at the spa's entrance where the bathers can clean their feet before entering your spa.

Allow for Service Access

Many people choose to install a decorative structure around their spa. If you are installing your spa with any type of structure on the outside, such as a gazebo, remember to allow access for service. It is always best to design special installations so that the spa can still be moved, or lifted off the ground.

Preparing a Good Foundation

Your spa needs a solid and level foundation. The area that it sits on must be able to support the weight of the spa, with water and the occupants who use it. If the foundation is inadequate, it may shift or settle after the spa is in place, causing stress that could DAMAGE YOUR SPA SHELL AND FINISH.

Damage caused by inadequate or improper foundation support is not covered by the warranty. It is the responsibility of the spa owner to provide a proper foundation for the spa.

Place the spa on an elevated 3 to 4" / 30 cm concrete slab. Pavers, gravel, brick, sand, timbers or dirt foundations are ***not*** adequate to support the spa.

We strongly recommend that a qualified, licensed contractor prepare the foundation for your spa.

If you are installing the spa indoors, pay close attention to the flooring beneath it. Choose flooring that will not be damaged or stained.

If you are installing your spa on an elevated wood deck or other structure, it is highly recommended that you consult a structural engineer or contractor to ensure the structure will support the weight of 150 pounds per square foot (732 kg / m2).

To properly identify the weight of your new spa when full, remember water weighs 8.33 lbs. per gallon, or 1 kg per liter. For example, an average 8' spa spa holds approximately 500 gallons, or 1892 liters, of water. Using this formula, you will find that the weight of the water alone is 4,165 lbs, or 1892 kg. Combined with the dry weight of the spa you will note that this spa will weigh approximately 5,000 lbs, or 2267 kg, when full of water.

Location of Electrical Cord

This applies to 110V systems.

The electrical cord is located inside the equipment area and must be removed in order to plug in the spa.

Remove the access panel for the equipment area and set it aside. (Access panel removal is described on page 20.)

Locate the power cord with the GFCI plug. Inspect the cord for damage before use.

Route the GFCI plug through the access hole located in front under the access panel area.

Pull the full length of the power cord (15 feet / 4.6 m) through the access hole.

Replace the access panel. Do not overtighten the screws.

Testing the GFCI

Test the GFCI plug prior to first use and periodically when the spa is powered.

1. Plug in the GFCI into the power outlet. The indicator should turn on.
1. Press the TEST button. The GFCI will trip, the indicator will turn off, and the spa will stop operating.
2. Press the RESET button. The GFCI will reset, the indicator will turn on again, and the spa will turn back on.

The spa is now safe to use.

If the GFCI trips while the spa is in use, press the RESET button. If the GFCI does not reset, unplug the spa and call your spa dealer for service. DO NOT USE THE SPA!

110V / 60 Hz Electrical Installation

This product is a cord-connected spa with a pump heater, lighting fixture, and spa side control. The operating power is 110V AC.

A licensed electrician may be required to upgrade your standard receptacle and/or circuit breaker. Always follow applicable local, state and federal codes and guidelines.

The spa is equipped with a 15 amp GFCI cord and plug kit.

Plug the spa into a dedicated electrical line with a 15 amp breaker.

Always use a weatherproof-covered receptacle. Receptacle shall be located not less than 5 feet (1.5 m) from and not exceeding 10 feet (3.0 m) from the inside wall of the spa (NEC 680.43(A)).

Do not use extension cords. Using an extension cord will void your warranty.

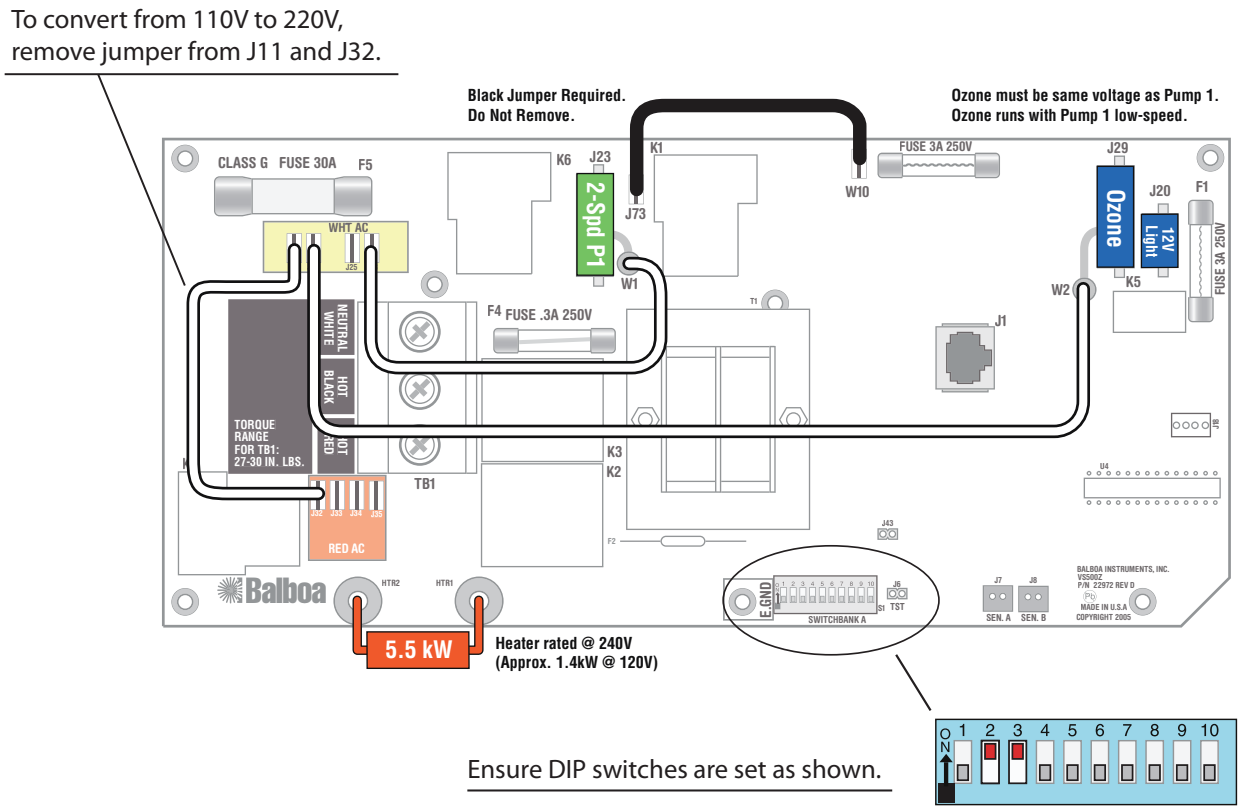
Do not bury the power cord. If your cord becomes damaged, replace it before next usage.

If you need to replace your cord, replace it with a 15 amp GFCI connection. The cord may not be longer than 15 feet (4.6 m). You can order a replacement GFCI and cord kit from customer service, part number ELE09700086.

110V to 220V Conversion

To convert the system from 110V to 220V:

1. Remove jumper from J11 and J32.
2. Set DIP switches.
3. Connect 240V to circuit board. See section “240 Volt Electrical Installation” for wiring and GFCI requirements.



240 Volt Electrical Installation

All 240V spas must be permanently connected (hardwired) to the power supply. See the wiring diagram on page 8.

These instructions describe the only acceptable electrical wiring procedure. Spas wired in any other way will void your warranty and may result in serious injury.

When installed in the United States, the electrical wiring of this spa must meet the requirements of National Electric Code, ANSI/NFPA 70-2008 and any applicable local, state, and federal codes.

The electrical circuit must be installed by an electrical contractor and approved by a local building or electrical inspector.

Failure to comply with state and local codes may result in fire or personal injury and will be the sole responsibility of the spa owner.

The power supplied to the spa must be on a dedicated GFCI protected circuit as required by ANSI/NFPA 70 with no other appliances or lights sharing the power.

Use copper wire with THHN insulation. Do not use aluminum wire.

Use the table below to determine your GFCI and wiring requirements.

When NEC requires the use of wires larger than #6 AWG, install a junction box near the spa and use #6 AWG wire between the junction box and the spa.

Wire runs over 85 feet must increase wire gauge to the next lower number. For example: A normal 50 amp GFCI with four #8 AWG Copper wires run over 85 feet would require you to go to four #6 AWG copper wires.

Read and follow the heater manufacturer's safety and installation instructions prior to installation and operation. Incorrect installation may damage the heater and void its warranty.

Testing the GFCI Breaker

Test the GFCI breaker prior to first use and periodically when the spa is powered. To test the GFCI breaker follow these instructions (spa should be operating):

1. Press the TEST button on the GFCI. The GFCI will trip and the spa will shut off.
2. Reset the GFCI breaker by switching the breaker to the full OFF position, wait a moment, then turn the breaker back on. The spa should have power again.

240V GFCI and Wiring Requirements

The control system is set at the factory to run on the low power setting for 40 amp operation. This is the default setting. Spa owners can have their installer change this setting so the spa will run on high power for 50 amp operation.

Warning: Never set a spa to run on high power without installing a properly rated GFCI.

Power Mode	GFCI Required	Wires Required
Power saver mode *This is the factory default setting.*	One 30 amp GFCI	Four #8 AWG copper wires
High power setting *See configuration instructions on the next page.*	One 40 amp GFCI	Four #8 AWG copper wires

High Power Configuration

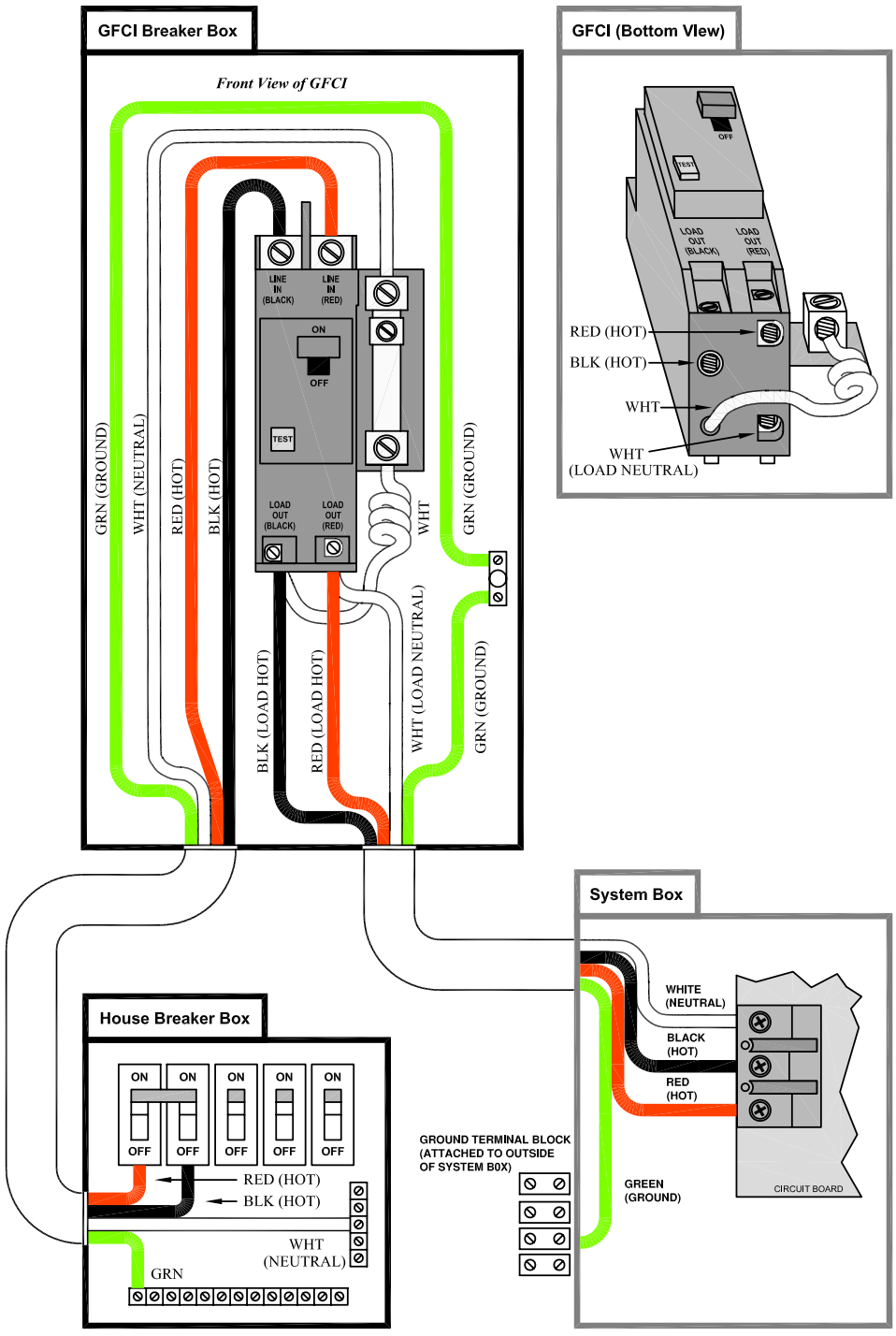
OFF Position (Down)	Default setting	ON Position (Up)
Test Mode OFF	◀ A1	Test mode (normally OFF)
Button layout will be: Unused, Pump 1, Temp, Light	A2 ▶	Button layout will be: Pump 1, Light, Temp Down, Temp UP
Use Lite Duplex or Digital Duplex panel	A3 ▶	Use Mini Panel
N/A (must be OFF)	◀ A4	
Pump 1 high-speed timeout *See table below*	A5	
60Hz operation	◀ A6	50Hz operation
Standard/Economy/Sleep mode changes allowed	◀ A7	Standard mode only
Temperature displayed in Fahrenheit	◀ A8	Temperature displayed in Celsius
Pump 1 low-speed timeout *See table below*	A9	
Heater can run while the high-speed pump is running (HIGH amperage mode)	◀ A10	Heater is disabled while the high-speed pump is running (LOW amperage mode)

Note: Arrow indicates factory default setting.

Pump 1 Timeouts

A5	A9	Low speed	High speed
OFF	OFF	2 hours	15 minutes
ON	OFF	2 hours	30 minutes
OFF	ON	15 minutes	15 minutes
ON	ON	30 minutes	30 minutes

GFCI Wiring Diagram



Filling and Powering Up Your Portable Spa

Never fill your spa with soft water.

Soft water makes it impossible to maintain the proper water chemistry and may cause the water to foam, which will ultimately harm the finish of the spa and void your warranty.

1. Once the spa has been placed on an approved surface and has been correctly wired by a licensed electrician, inspect all plumbing connections in the equipment area of your spa. Ensure that these connections are secure and that they did not loosen during shipment.
2. If equipped, open all gate valves in the equipment area. Before operating the spa, these valves must be in the up or “open” position.

VERY IMPORTANT!

Never run the spa with the gate valves closed or without water circulating for long periods of time. Be careful not to over-tighten the plumbing fittings.

3. Remove the cartridge from filter canister.
4. Place a garden hose in the filter canister and fill your spa with ***regular tap water*** about six inches from the top.

VERY IMPORTANT!

Always fill the spa through the filter canister! Failure to do so may cause air to be trapped in the filtration system and prevent the pumps from operating properly.

5. Presoak the filters in spa water.

VERY IMPORTANT!

You must presoak the filters before inserting them in the filter canister. Dry filters can allow air into the filtration system which can cause pump failure.

6. Once the water is at the correct level and air is bled, plug in the spa into a dedicated electrical outlet.

   Note: When the power is turned on to the spa, the controls will perform a diagnostic check for approximately five minutes. When the diagnostic is complete, the spa will automatically operate at filter speed and continue heating until the spa water temperature reaches the default temperature of 100˚F.

8. If no water is flowing when the pump is running, there could be an air pocket at the suction side of the pump. Shut off power to the spa and loosen the pump union on the suction side of the pump to bleed the air. When air is bled, turn power back on.
9. Install the pre-soaked filters into the filter canister.

The spa is now ready for use.

Operating Your Spa

Electronic Control Operation

Initial Start up

When first powered up, your spa will perform a self-diagnostic check and go into priming mode. When the control panel displays ***PR***, IMMEDIATELY do the following:

1. Press the JETS button to turn on the pump and let it run for 10 seconds. The pump should be running in low speed.
2. Press the JETS buttons again and let the pump run in high speed for 10 seconds.
3. Press the JETS button again to turn off the pump. The pump should be left in the off position for 10 to 15 seconds.
4. Repeat steps 1 through 3 until water is flowing through all the jets and all air is removed from the plumbing.

When the spa has finished priming, the heater will be activated and the water temperature will be maintained in standard mode. The spa will heat to 100°F (37.5°C) at start up until the set temperature is changed as described below.

Temperature Adjustment

(Range 80°F to 104°F, 26°C to 40°C)

The electronic control panel displays the actual water temperature in degrees Fahrenheit. The displayed temperature will only be current after the pump has been running for at least two minutes.

To display the temperature that the spa is set to:

- Press either the **Up** or **Down** button. The temperature setting will flash.
- While the display is flashing, each time you press the **Up** or **Down** button, the set temperature will change up or down one degree.

Standard, Economy and Sleep Heating Modes

Your new spa is equipped with a heating feature that gives you complete control of the heating system. When the spa is powered up, it will automatically start in standard heating mode.

- ***St*** will light briefly on the main display. In this mode, the heating system will automatically maintain the set spa temperature. In the economy-heating mode, the heating system will only activate during filtration times.
- ***Ec*** will display solid if temperature is not current and will alternate with spa temperature if measured temperature is current.
- Economy mode will heat the water to the set temperature while Sleep mode, indicated by a ***SL*** on the main display, will also only activate the heater during the filtering cycles but will only heat the water to within 20°F (10°C) of the set temperature. Like Economy mode, ***SL*** will display solid when temperature is not current and will alternate with actual temperature when it is current.

Switching Modes

- Press either the **Up** or **Down** button followed by the **Light** button.
- Press the same sequence to switch to the next mode.

Jets

Press the **Jets** button:

- Once to activate low speed pump.
- Twice to activate high speed.
- Three times to turn pump off.

Light

Press the **Light** button to turn on the light. Press it once again to turn the light off. All optional lighting such as the control panel light and cabinet perimeter lighting is controlled by the **Light** button and will turn on and off with the spa light.

Automatic Time outs

These features will automatically turn themselves off during periods of continuous use:

• Low speed pump	After 2 hours
• High speed pumps	After 15 minutes
• Spa light	After 4 hours

Setting Filtration Cycles

Your spa is programmed to filter twice a day. The first cycle will begin 6 minutes after the spa is turned on and the second cycle 12 hours later. The factory has programmed the cycle to last for 2 hours but this can be switched to 4, 6, or 8 hours depending on your requirements. The default filter time is two hours.

To set filtration time, turn off the power to the spa at the time of day you would like one of the filtration cycles to begin, then turn back on after 30 seconds. When power has been restored, press either the **Up** or **Down** button then the **Jets** button. Press either the **Up** or **Down** button again to change the filtering cycle duration. When desired duration is selected press the **Jets** button to exit.

The low speed pump will run for the duration of the filtering cycle and if an ozone system is installed it will be activated. During filtering, ***FC*** will appear on the main display.

Your new spa comes equipped with an electric heater. Following the directions listed below will ensure the most efficient operation:

NOTE: This method is only for spa usage under two hours a week.

- Keep the spa's operating temperature 5°F below the desired usage temperature when not in use. One or two hours before use, set the temperature to the desired temperature.
- If the spa usage exceeds two hours a week, the set temperature should remain at the desired usage temperature.

Allowing the water temperature to lower more than 10°F below the desired usage temperature and reheating it prior to usage will cause the heater to operate longer than it normally would maintaining the desired temperature. Doing this will increase your operating cost and makes your heater work more than necessary.

Diagnostic Messages

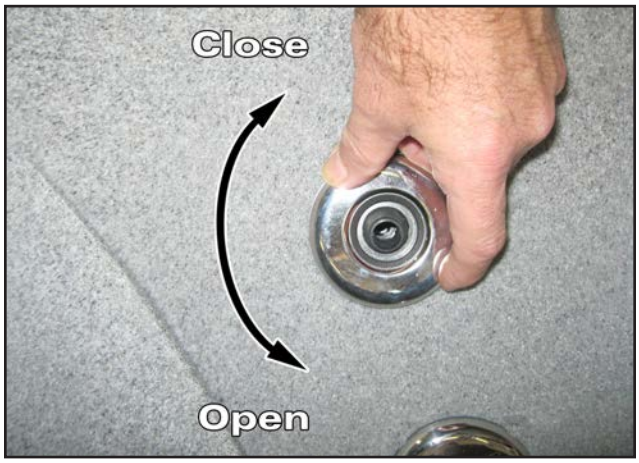
Message	Meaning	Action Required
No message on display	1) Spa temperature is unknown. 2) Spa is in Economy or Sleep mode. 3) Power has been cut off to the spa.	1) After pump has been running for 2 minutes temperature will be displayed. 2) In Economy or Sleep mode, the pump may be off for hours outside a filter cycle. If you wish to see the current spa temperature, either switch to Standard mode or turn Jets1 on for at least two minutes. 3) The control panel will be disabled until power returns. Spa settings and time of day will be preserved for 30 days with a battery back-up.
dr	Insufficient water detected in heater. Spa will be shut down for 15 minutes.	Check water level in spa. Refill if necessary. Make sure pumps are been primed and filter cartridges are clean. Press any button to reset or wait 15 minutes and spa will automatically reset. If message spa does not reset, call your dealer or service organization.
drY	Insufficient water detected in heater. Spa is shut down. (Displays on third occurrence of dr message.)	Follow directions for dr message and press any button to reset spa. Spa will not automatically reset when dry or dY is displayed.
Ec	Indicates heater is in Economy Mode.	None.
--	Temperature unknown	After the pump has been running for two minutes, the temperature will be displayed.
HFL	A difference in readings between temperature sensors has been detected indicating a possible water flow problem.	Make sure spa is filled to proper level and that pumps are primed and filter cartridges are clean. If message does not reset, call your dealer or service organization.
ICE	Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
LF	Persistent low flow problems. Heater is shut down, but other spa functions continue to run normally. Displays on the fifth occurrence of the HL or HFL message within 24 hours.	Follow action required for HL or HFL message. Heating capacity of the spa will not reset automatically. Press any button to reset.
OHS	Overheat protection. The spa has shut down. One of the sensors has detected that the spa water is 110°F.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.

Message	Meaning	Action Required
OHH	Overheat protection (spa is shutdown). One sensor has detected 118˚F (48˚C) at the heater.	DO NOT ENTER THE WATER! Remove the spa cover and allow spa to cool below 107˚F (42˚C). Press any button on the topside display to reset spa. If spa will not reset after spa has cooled, turn off power for approximately 30 seconds and then turn power back on. If display message is repeated then shut the power off to the spa and call your dealer or service organization.
Pr	When your spa is first actuated, it will go into priming mode.	The priming mode will last for up to four minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.
SL	Indicates heater is in Sleep Mode.	None.
SnA **Snb**	Spa is shut down. The sensor that is plugged into the sensor “A” or “B” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
SnS	Sensors are out of balance. • If this is alternating with the temperature, it may just be a temporary condition. • If the display shows only this message (periodically blinking), the spa is shut down.	Contact your dealer or service organization.
ST	Indicates heater is in Standard Mode.	None.

Adjusting Jets

The larger massage jets in your spa are adjustable. Rotating the face of an adjustable jet to the left (counter-clockwise) will decrease the amount of water flow through the jet. Rotating the face of an adjustable jet to the right (clockwise) will increase the amount of water flow through the jet. (See example shown below.)

The neck jets are smaller in size and are not adjustable.



Clear Water Plan

This section is intended for new spa owners with no experience with water chemistry. Everyone's experience with maintaining water quality is different, but there are some general concepts you need to know.

Water maintenance is not difficult, although it requires regular attention. The most important thing to understand about taking care of your spa water is that preventive action is much easier than correcting water quality issues.

Contents of this section:

Testing and Adjusting Spa Water
Sanitation
Filtration
Bather Load
Starting the Spa with Fresh Water
Maintenance Schedule
Troubleshooting Water Clarity Problems

The Key to Clear Water

Excellent water quality is a simple matter of four things:

Regularity

Clear water requires regular maintenance. Establish a routine based on a regular schedule for your spa water maintenance.

Maintaining your water quality helps the enjoyment of your spa and extends your spa's life by preventing damage from neglect and chemical abuse.

See page 26 for the schedule of recommended maintenance.

Filtration

Cleaning your filter regularly is the easiest and most effective single thing you can do to keep your water clear.

A clogged or dirty filter will cause the heater and pump to work harder than they need to, possibly causing them to fail.

The spa's heating system will only function with the proper amount of water flow through the system.

See page 19 for filter cleaning instructions.

Sanitation

Sanitizers kill bacteria and viruses and keep the water clean. A low sanitizer level will allow microbes to grow quickly in the spa water.

We recommend using either chlorine or bromine as your sanitizer.

See page 17 for learn how to use sanitizer.

Chemical Balance

You will need to test and adjust the chemical balance of your spa water. Although this is not difficult, it needs to be done regularly.

Depending on your choice of sanitizer, you need to test the level of calcium hardness, total alkalinity, and pH. Spa owners with a Cal Clarity bromine generator also need to check total dissolved solids and phosphates.

See page 16 for learn how to balance your spa water.

Testing and Adjusting Spa Water

You have two types of testing methods to choose from:

- **The reagent test kit** is a method which provides a high level of accuracy. It is available in either liquid or tablet form.
- **Test strips** are a convenient testing method commonly used by spa owners.

Balancing the Total Alkalinity

Total alkalinity (TA) is the measure of the total levels of carbonates, bicarbonates, hydroxides, and other alkaline substances in the water. TA can be considered a "pH buffer". It is the measure of the ability of the water to resist changes in pH level.

The recommended total alkalinity is 80 - 120 ppm.

If the TA is too low, the pH level will fluctuate widely from high to low. Low TA can be corrected by adding an alkalinity increaser

If the TA is too high, the pH level will tend to be too high and may be difficult to bring down. High TA can be corrected by adding an alkalinity decreaser.

When the TA is balanced, it normally remains stable, although adding water with high or low alkalinity will raise or lower the TA level.

Balancing the Calcium Hardness

Calcium hardness (CH) is a measure of the total amount of dissolved calcium in the water. Calcium helps control the corrosive nature of the spa's water and is why soft water is not recommended. The low calcium content of soft water is very corrosive to the equipment and can cause staining of the spa shell.

The recommended calcium hardness is 150 - 200 ppm.

If the CH is too low, add a calcium hardness increaser.

If the CH is too high, dilute the spa water with soft water.

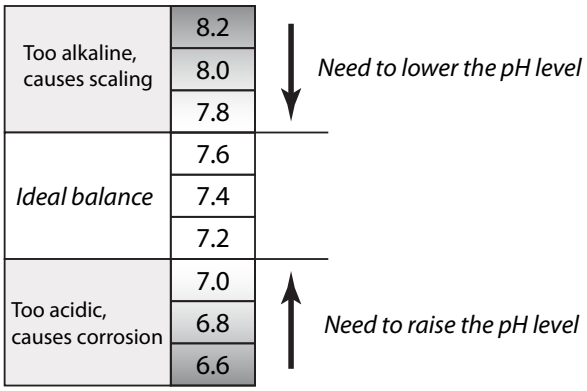
When the CH is balanced, it normally remains stable, although adding soft water or very hard water will raise or lower the CH level.

Balancing the pH

The pH level is the measure of the balance between acidity and alkalinity.

If the pH is too low, it can cause corrosion of metal fixtures and the heating element. Low pH can be corrected by adding a pH increaser.

If the pH is too high, it can cause scaling by allowing metals or minerals to form deposits and stain spa surfaces. High pH can be corrected by adding a pH decreaser.



Testing For:	Ideal Range (ppm)		Chemicals To Use:	
	Minimum	Maximum	To Raise	To Lower
Total Alkalinity	80	120	pH-Alkalinity Up	pH-Alkaliity Down
Calcium Hardness	150	200	Liquid Hardness Increaser	Stain and Scale Defense
pH	7.4	7.6	pH-Alkalinity Up	pH-Alkaliity Down

Sanitation

Sanitizers kill bacteria and other organic waste by breaking them down to non-harmful levels and are filtered out. Before you fill your spa, you need to decide which chemical sanitizer you wish to use. Consult your spa dealer for the right decision with regards to your lifestyle and spa usage.

We recommend either **bromine** or **chlorine** as your sanitizer. Both work well when maintained regularly.

DO NOT use trichlor. Trichlor is very acidic and the hot temperature of the spa causes it to dissolve too quickly. It will cause damage to your spa and will void your warranty.

Whichever plan you decide on, follow it completely and don't take shortcuts. It will provide you with clean, safe, clear spa water with a minimum of effort.

Using Chlorine as a Sanitizer

If you choose to use chlorine as a sanitizer, only use granulated chlorine, not liquid chlorine.

Once a week, check the chlorine level using either a test strip or a reagent kit. See the table on the following page for the ideal range.

Add one or two tablespoons granulated chlorine to the spa water weekly. Note that chlorine dissipation rate will be faster at higher water temperatures and slower at lower temperatures.

When you add chlorine, open all of the jets and run the spa at high speed with the cover open for at least 30 minutes.

Follow the maintenance schedule on page 24.

Using Bromine as a Sanitizer

Bromine is a very effective sanitizer that produces low chemical odors. Unlike chlorine, it can break down bacteria and other impurities to a safe level with a low burn-out rate.

Bromine is available in both granulated and tablet form. Use granulated sodium bromide to establish your bromine base. Use tablets to maintain it.

When you begin with fresh water, add 2 ounces of granulated bromide. Open all of the jets and run the spa at high speed with the cover open for at least 30 minutes. This is your base bromine level as the tablets will take a while to dissolve.

Place three or four bromine tablets in your chemical floater.

Follow the maintenance schedule on page 24.

Testing For:	Ideal Range (ppm)	
	Minimum	Maximum
Chlorine level	3.0	5.0
Bromine level	6.7	11.0

Shocking the Water

In addition to using a chemical sanitizer, you will periodically need to shock the water. Shocking the water helps remove burned-out chemicals, bacteria, and other organic material from your spa's water and improves your sanitizer's effectiveness.

Do not use chlorinating shock, which will damage your spa's jets and pump seals. Only use an oxidizer shock. It can be used with either chlorine or bromine sanitizers.

Add one ounce of oxidizer shock once a week, after heavy bather loads, or if water has a strong odor.

Spa must be running with all of the jets on high for 30 minutes with the cover open. If necessary, repeat oxidizer shock in 30 minute intervals.

Chemical Safety

Read and follow all printed instructions listed on bottles and packages. Failure to follow chemical directions may result in serious injury, sickness, or even death.

Do not exceed chemical dosages as recommended on chemical bottles and packages.

Never change chemical brands or types without completely draining, flushing and thoroughly cleaning the spa and cover first.

Never mix chemicals together.

Do not allow chemicals to come in contact with skin, eyes or clothing. Remove and wash clothing that may have been exposed to chemical contact prior to wearing them again.

Inhaling or ingesting chemicals will cause serious injury, sickness, or even death.

Chemicals must be stored completely out of the reach of children in an area that is well vented, cool, and dry. Failure to provide a proper area for chemical storage may result in serious injury, sickness, fire explosion and even death. Do not store your chemicals inside the equipment area of your spa.

Pure Cure™ Water Sanitizer

The Pure Cure™ water sanitizer is an optional water purification system installed at the factory. It eradicates germs in the water that are resistant to chlorine-based chemicals using high intensity UV light.

The water sanitizer works automatically during the spa's filtration cycle. We recommend increasing filtration time setting from F2 (two hours twice a day) to F6 (six hours twice a day). See page 11 for setting filtration cycle.

The water sanitizer is virtually maintenance-free. Once a year the UV light needs to be replaced. See page 23 for instructions. **However, the water sanitizer is not a user-serviceable item and maintenance must be performed by a spa technician. Have your service technician consult the manufacturer's instruction and service manual.**

Bather Load

"Bather Load" is the term used to describe the number of people using a spa, combined with the length of usage, and the frequency of usage. All these factors have a great effect on the spa water. The higher the bather load, the more chemicals need to be added and a longer filtration time will be needed.

Recommendations are designed for spas with average bather load (3 to 4 people, 15 minutes of usage, three times a week at 100 degrees) If your bather load exceeds these guidelines, and you experience water quality problems, increase the amount of filtration first, (go to the next higher filtration number) then if water quality is still not adequate, consult the advice of your spa dealer for additional chemical or system recommendations. Be sure to give them your bather load information.

Filter Cleaning

The filter is the part of your spa that removes the debris from the water and needs to be cleaned on a regular basis to maximize your spa's filtering performance and heating efficiency.

In addition to spraying off the filter weekly to remove surface debris, your filter should be deep cleaned periodically to dissolve scale and particles that get lodged deep within the filter fibers and impede the filtration process. Even if the filter looks clean, scale and particles can clog the fibers and prevent water from flowing through the filter resulting in the most common spa problem—no heat, caused by a dirty filter.

We recommend you clean your filter once a month and replace it once a year or as necessary.

1. Remove the filter by turning it counterclockwise, unscrewing the bottom threads, then pulling it up and out.
2. Place the dirty filter into a bucket of water deep enough to cover the filter. Add 8 oz of liquid filter cleaner to the bucket of water.

   Note: It is a good idea to keep a spare filter to use in the spa while the dirty filter is being deep cleaned. This way, you can rotate the filters and both will last longer.
3. Twist off the tablet tube and set it aside.
4. Soak the filter for a minimum of 24 hours.
5. Spray the filter with a water hose. Spray each pleat carefully.
6. Reinstall the filter. Do not overtighten.

Starting the Spa with Fresh Water

Damage to the spa or spa's components from improper chemicals or chemical usage is not covered under the spa's warranty.

Prior to filling a spa for the first time, or after a routine draining, you will want to follow this start-up plan to extend water life and performance.

As with all chemical dosages listed in these Clear Water Plans, start-up dosages are intended for 500-gallon spas. Please adjust the chemical dosages to the capacity of your particular spa.

1. Clean the surface of the spa with a multi-purpose cleaner.
2. Fill the spa to the proper water level with normal tap water. (Do not use soft water.)
3. Use test strip and balance the spa water.
   - Adjust total alkalinity (acceptable range is 80-120ppm).
   - Adjust pH if necessary (between 7.2 to 7.8).
4. Add either chlorine or bromine (but not both).
5. Turn on jets for 15 minutes. Leave spa uncovered during this time.
6. Put cover on spa and allow to heat up to desired temperature.

Water level is very important to the operation of your spa. If the water level is too low or too high, your spa will not operate properly. The water level should be about six inches from the top when the spa is not being used.

Troubleshooting Water Clarity Problems

Problem	Probable Causes	Possible Solutions
Cloudy Water	• Dirty filter • Excessive oils / organic matter • Improper sanitization • Suspended particles / organic matter • Overused or old water	• Clean filter • Shock spa with sanitizer • Add sanitizer • Adjust pH and/or alkalinity to recommended range • Run jet pump and clean filter • Drain and refill the spa
Water Odor	• Excessive organics in water • Improper sanitization • Low pH	• Shock spa with sanitizer • Add sanitizer • Adjust pH to recommended range
Chlorine Odor	• Chloramine level too high • Low pH	• Shock spa with sanitizer • Adjust pH to recommended range
Musty Odor	• Bacteria or algae growth	• Shock spa with sanitizer – if problem is visible or persistent, drain, clean and refill the spa
Organic buildup / scum ring around spa	• Buildup of oils and dirt	• Wipe off scum with clean rag – if severe, drain the spa, use a spa surface and tile cleaner to remove the scum and refill the spa
Algae Growth	• High pH • Low sanitizer level	• Shock spa with sanitizer and adjust pH • Shock spa with sanitizer and maintain sanitizer level
Eye Irritation	• Low pH • Low sanitizer level	• Adjust pH • Shock spa with sanitizer and maintain sanitizer level
Skin Irritation / Rash	• Unsanitary water • Free chlorine level above 5 ppm	• Shock spa with sanitizer and maintain sanitizer level • Allow free chlorine level to drop below 5 ppm before spa use
Stains	• Total alkalinity and/or pH too low • High iron or copper in source water	• Adjust total alkalinity and/or pH • Use a stain and scale inhibitor
Scale	• High calcium content in water – total alkalinity and pH too high	• Adjust total alkalinity and pH – if scale requires removal, drain the spa, scrub off the scale, refill the spa and balance the water • Use a stain and scale inhibitor

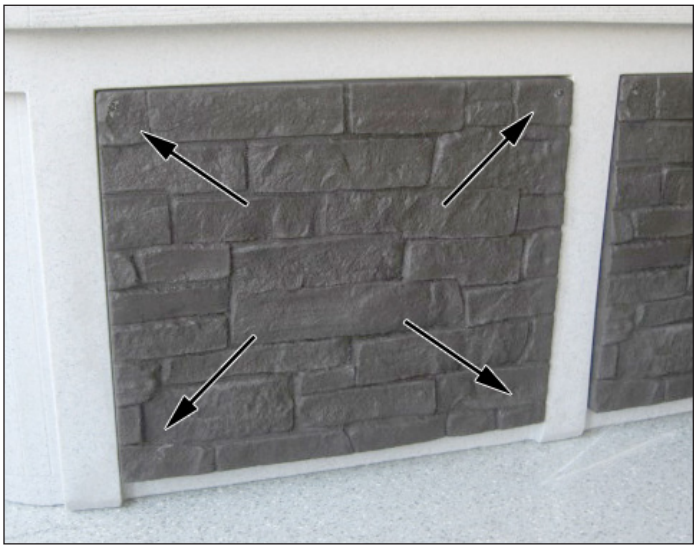
Removing the Access Panel

You will need to remove the access panel in order to drain your spa.

1. Unplug the spa.
2. Using a Phillips screwdriver, remove the screws located in the four corners of the access panel.
3. Remove the access panel and set it aside.

Replace the access panel when you are finished. Do not overtighten the screws.

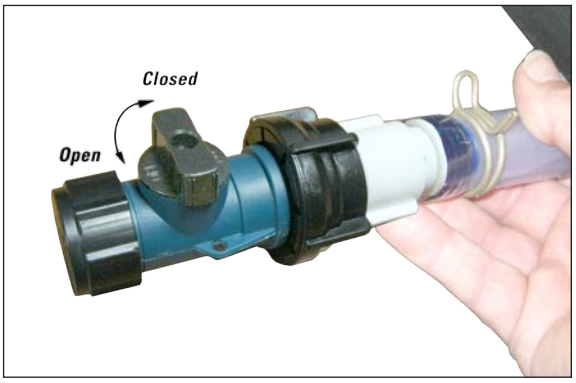
Do not run the spa with the access panel removed!



Draining Your Portable Spa

Your spa should be drained every four to six months and refilled with fresh tap water. The following is the recommended method for draining your spa.

1. Turn off the power at the breaker.
2. Remove all filters.
3. Remove the access panel as described above.
4. Locate hose ending with the ¾ inch hose-bib fixture.
5. Unscrew the cap.
6. Hook up the female end of a garden hose to the drain fitting.
7. Place the other end of the garden hose where you would like the water to drain to.
8. Turn the valve on the hose-bib fixture to open the drain.
9. Let spa drain completely, then remove garden hose.
10. Turn the valve on the hose-bib fixture to close the drain.
11. Replace the cap.



Winterizing (Cold Climate Draining)

In many areas of the country, the temperature drops below 32˚F (0°C). We recommend that you always have your spa full of water and running at normal spa temperatures (80˚F to 100˚F, 26.7°C to 37.8°C). This will help reduce the risk of freezing in your spa and your spa's equipment.

Warning: If you find the need to drain your spa, please be aware of the potential of freezing in your spas equipment and plumbing. Even if the directions below are followed perfectly, there is no guarantee that your spa will not suffer freeze damage.

Freeze damage is not covered by your warranty.

1. Open all filter covers.
2. Remove the filter baskets and filters.
3. Drain your spa completely as described in the instructions above.
4. Remove drain plugs from the front of the pumps.
5. Disconnect the unions from both sides of the pump.
6. Use a wet/dry vacuum to blow any remaining water out of the jets and equipment area.

Cover your spa with a good spa cover and an all-weather tarp to ensure that neither rain nor snow enters the spa.

Installing Cover Latches

You will need a drill with a 3/32" drill bit and a Phillips screwdriver.

Your cover will have four clips attached to the ends of the four latches, two on each end of the spa cover. There will also be a small bag with 12 screws.

1. Place the cover on the spa with the latches placed where you want to mount them on the spa.

2. Using the latch clips as a guide, drill three holes for the mounting screws.

3. Insert three screws in the latch clip and fasten it to the spa shell. Make sure they are snug, but do not overtighten them. Do the same for the remaining latches. Drill and attach latch clips to the shell **one at a time**.

4. When you have finished inserting all of the screws, use the latch key to unlock the cover latches.

Covering Your Spa

Important! Keep the spa covered when not in use!

- Covered spas will use less electricity in maintaining your set temperature.
- Covering your spa will protect your spa's finish from the sun's ultraviolet rays.
- You are required to keep the spa covered to maintain warranty coverage.
- Covering your spa helps prevent children from drowning in the spa.

See the manual enclosed with your cover for instructions on mounting the locks and how to lock and unlock the cover.

In addition, while the spa cover is rigid, it is not designed to support any weight. Therefore, as a safety precaution and to preserve the life of your cover, you must not sit, stand, or lie on it, nor should you place objects of any kind on top of it.

Cleaning and Replacing the Filter

Filtration is one of the most important steps you can take to ensure clean, clear water. It is far less expensive to fix water clarity problems by filtering your spa than by using excessive amounts of chemicals, excessive filtration times, or by water replacement.

In addition, you need to regularly clean out the filter basket mounted on top of the filter well.

See the section "Filter Cleaning" on page 22 for more information on cleaning your filter.

Cleaning Your Spa

Spa Cover and Pillows

Due to the constant punishment your spa cover and pillows receive, you should protect them by applying a vinyl and leather cleaner as part of your monthly maintenance plan. Use a product that is specifically designed to protect spa covers and pillows from chemical and ultraviolet light damage without leaving an oily residue behind that is normally associated with common automotive vinyl protectants.

Warning: ***Do not*** use automotive vinyl protectants on spa covers or pillows. These products are generally oil-based and will cause severe water clarity issues that are difficult to correct.

Spa Shell

Each time you drain your spa, before you refill it you should clean your spa shell with an all-purpose cleaner and apply a coat of surface protectant.

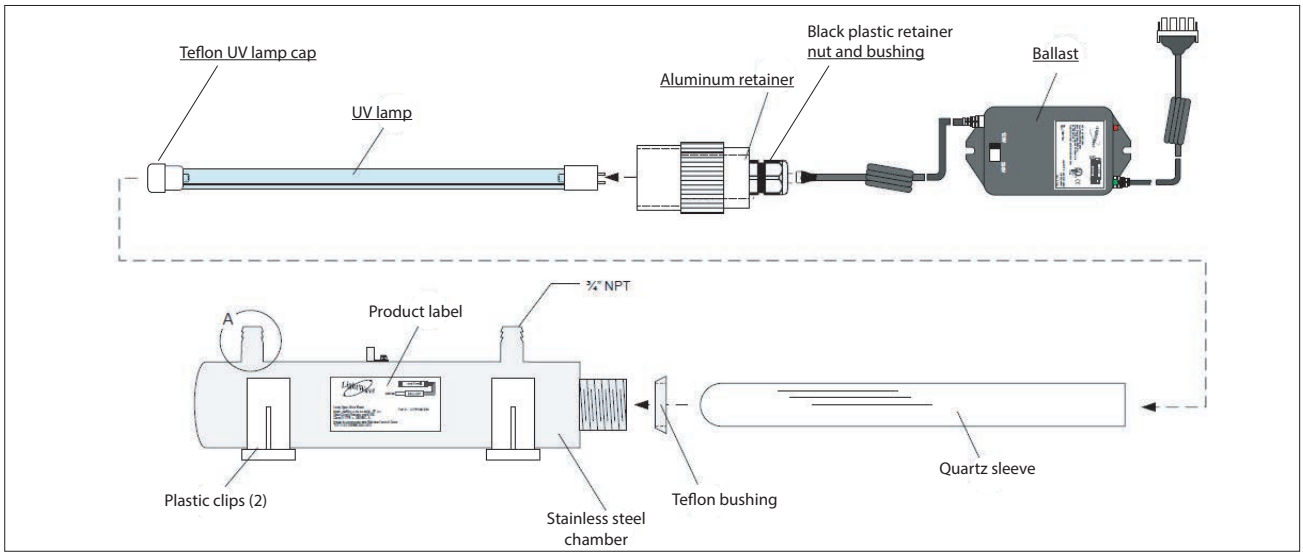
Use a low detergent, non-abrasive cleaner specifically formulated to clean the spa without damaging its finish.

Use a non-oil based surface protectant that is specifically formulated to protect the spa's finish from the chemicals and minerals associated with normal spa use.

Changing the UV Lamp

CAUTION: Always turn off power to the spa at the GFCI prior to any maintenance.

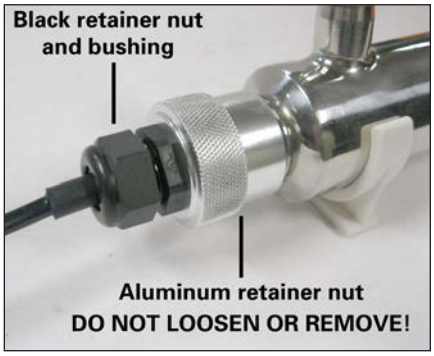
Note: Periodically you should the check the light on the transformer for the UV light system. The transformer is mounted in the spa equipment area. When it is operating normally, the light will be green. When it requires maintenance, it will be red. This usually happens when the UV lamp needs replacing. The UV lamp is a wearable part that needs replacing about once a year. See page 27 for part numbers for replacement parts.



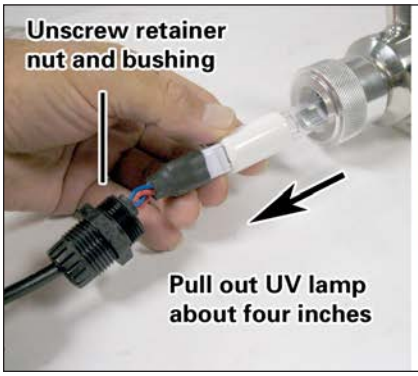
Before you begin, disconnect power to the spa.

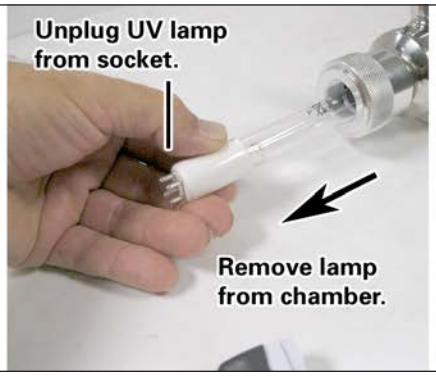
1. Cut the tie wrap that attaches the UV lamp chamber to the spa frame.
2. Unscrew both the black plastic retainer nut and bushing from the aluminum retainer. **Do NOT loosen or remove the aluminum nut retainer.**
3. Pull out the UV lamp approximately 2" from the chamber.
4. While holding the UV lamp end, remove the lamp socket from the end.
5. Remove the UV lamp from the chamber.

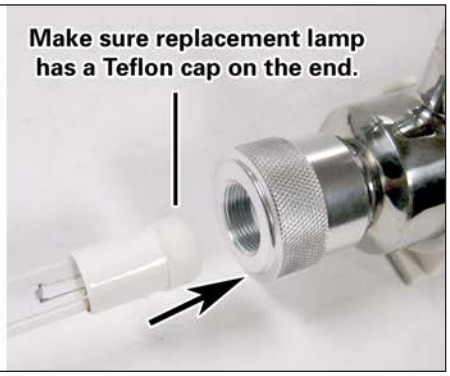
To reinstall the replacement UV lamp, follow these steps in reverse.



When replacement UV lamp has been installed, restore power to the spa at the GFCI, turn on the pump and let water run for five minutes to check for leaks.







Maintenance Schedule

Each time you refill the spa	Follow the section “Starting the Spa with Fresh Water” on page 9.
Prior to each use	Test the spa water using either test strips a reagent test kit. Adjust chemical levels as necessary.
Once a week	Test the spa water using either test strips a reagent test kit. Adjust chemical levels as necessary. If your water source is high in calcium, add stain and scale preventer.
Once a month	Deep clean your spa’s filter. (Follow filter cleaning instruction at beginning of this section)
Every two to four months	Drain and clean your spa with a multi-purpose cleaner for spas. Clean and treat spa cover, pillows, and cabinet (if equipped) with a vinyl cleaner for spas. Refill your spa, following the section “Starting the Spa with Fresh Water” on page 9.
Every four to six months	Change the spa water. You may find the need to change your spa water more frequently with heavy use. When empty, your spa should be cleaned with a non-abrasive cleaner and then rinsed thoroughly.
Once a year	Replace filter cartridges if the pleats appear frayed. Replace the UV lamp in the Pure Cure UV water sanitizer.

Replacement Parts

Jet Inserts and Jet Bodies		
Jet Insert	**Jet Body**	**Gasket**
SQ2, 2" directional jet **Stainless steel w/ black eyeball** PLU29523-012-200 	**2" clear jet body Pro-Loc SQR, ¾" smooth bard water x 3/8" smooth bard air (#29222-229-000)** PLU29222-299-000 	**2" jet grommet gasket (#29222-299-040)** PLU29222-299-040
SQ3, 3" directional jet **Stainless steel w/ black eyeball** PLU29533-112-200 	**3" clear jet body Pro-Loc SQR, ¾" smooth bard water x 3/8" smooth bard air (#29232-229-000)** PLU29232-299-000 	**3" jet grommet gasket (#29232-299-040)** PLU29232-299-040

Drain

Main Drain, Super Hi Flo Suction 2.5" Slip Wall Fitting Black (#640-3581LGV)

PLU21400146

Water Diverter Valve

Water Diverter Valve 1" Clear LED Ready 100% Shut-off with Starfire Design Handle

PLU21300452

Filter

Filter Cartridge, 25 Sq Ft

FIL11100235

Waterfall

SQL, SQR dual hydrostream (#25269-404-000) - includes jet insert, jet body, gasket and nut

PLU25269-404-000

Filter Cartridge Mounting Assembly

Filter cartridge mounting assembly, 2” NPT (#400-9130)

FIL11703210

O-ring for filter mounting

PLU21700462

Ozone Injector

Ozone Injector Mazzie #078K M-PVC

PLU21700836

Control Panel

VL-406U Control Panel

ELE09204632

Control Box

VS300 control box, one pump

ELE09020145

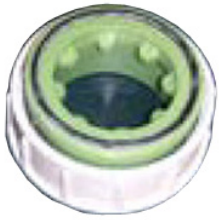
Two Speed Pumps

115V
1.5 BHP
XP2

PUM22000551

Friction Heat Union Assembly

PLU21800435



Lights

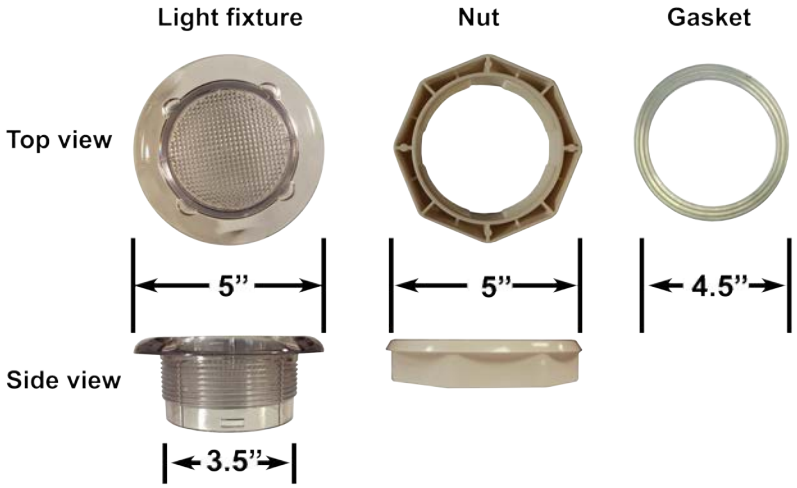
Jumbo 5” Spa Light Fixture OEM Kit, No Lenses or Back Cap Required (#630-K008LC)

LIT16100237

This fixture is for Interior Light LIT16100625 (see page 38).

Spa light fixture assembly

Contains three pieces:



Circuit Board

Circuit Board VS300

ELE09100411

Heater

5.5 kW flow-through heater with Smart Spa sensor

HEA14100450

Power Cord and Plug

110V GFCI Plug and Cord, 15'

ELE09700087

GFCI Plug

ELE09700070-CHN

Pure Cure™ UV Water Sanitizer

Pure Cure complete system (Lightwave)

LIT16000395

Stainless steel UV chamber

LIT16000400

Teflon seal ring

LTR16000401

Quartz sleeve

LIT16000402

UV lamp

LIT16000403

Aluminum retainer

LIT16000404

UV ballast, 15W 120V / 230V

LIT16000405

Flat retainer washer

LIT16000406

Mounting brackets

LIT16000407

Teflon UV lamp cap

LIT16000408

Spa Covers

All covers are basic spa covers with 4” - 2.5” taper and no logo

Size	Slate	Hunter Green
76” Round	COV76RDBAS42S1.0-NL	COV76RDBAS42GR1.0-NL
73” x 83”	COV7383BAS42S1.0-NL	COV7383BAS42GR1.0-NL
83” x 83”	COV8383BAS42S1.0-NL	COV8383BAS42GR1.0-NL

Spa Cover Lock and Key

Spa cover lock and key set (set includes 4 females, 4 males, key & screws package)

ACC01800026

Filter Covers

Roto Mold Spa Filter cover		**Cinnabar** ROT12000300CI	**Dark twilight** ROT12000300DA	**Sahara** ROT12000300SA

6 Foot Spa Panel

Smoke
ROT12000201SM

Rock panel, 22 ¾” x 22 ¼”

7 Foot Spa Panel

Smoke
ROT12000200SM

Rock panel, 27” x 22”

Round Spa Panels

Roto mold round door panel		**Cinnabar** ROT12000205CI	**Dark Twilight** ROT12000205DA	**Sahara** ROT12000100SA

Troubleshooting

Symptom	Possible Causes	Possible Solutions
System / Power Problems		
System does not work	Power is turned off	Reset spa
Control pad and spa equipment do not operate	No electrical power to spa	Turn on or reset the GFCI circuit breaker. If this does not solve the problem, have a qualified electrician check the electrical service.
	The 20 or 30A fuse, depending on the system, has blown	Contact your dealer
The spa does not turn off	Spa is trying to heat up	Check the temperature setting is in Standard mode
	Spa is in filter cycle	Normal. No adjustment necessary
	Spa is in Standard mode	Check setting
Control panel displays a message	An error may have has occurred	See Diagnostic Messages on page 12 for message code meanings
GFCI breaker trips repeatedly	Improper wiring to spa or GFCI breaker is defective	Consult with a qualified electrician
	There is a defective component on the spa	Contact your dealer
Heat Problems		
Spa does not heat	Heating mode not selected	See control panel instructions on page 10
	Water level is too low	Add water to correct level
	No electrical power to spa	Turn on or reset the GFCI circuit breaker. If this does not solve the problem, have a qualified electrician check the electrical service.
	Heater is defective	Contact your dealer
	Gate valve is partially or fully closed	Open gate valves. Note: Never operate your spa with the gate valves closed!
Spa gets warm but does not get hot	Thermostat has been turned down	Set control panel to a higher temperature
	Insufficient filtration time	Increase filtration time
	Water level is too low	Add water to correct level
	No electrical power to spa	Turn on or reset the GFCI circuit breaker. If this does not solve the problem, have a qualified electrician check the electrical service.
	Dirty filter cartridge	Clean filter cartridge
	Gate valves closed	Open gate valves
	Spa cover improperly positioned	Align spa cover
Spa gets too hot	Filtration time is set too long	Reduce filtration cycles, especially during summer months

Symptom	Possible Causes	Possible Solutions
Water Problems		
Water is not clean	For all water clarity problems, see page 19.	
High water consumption	Very high evaporation or heavy splashing	Use the cover and refill as necessary
Low water stream from the jets	Running in FILTER mode - slow speed	Select high speed jets
	Block wall suctions or skimmer	Clean the wall suction/skimmer. Remove blockage
	Dirty filter	Clean filter and replace
	Jets are closed	Open jets
	Valves closed	Open valves
No water stream from the jets	Pump has airlock	Remove airlock by priming spa (page 9)
	Jets are closed	Open jets
	Power switched off, system off	Reset power
	Pump is defective	Contact your dealer
	Pump fluctuations	Low water. Check level on skimmer flap
Water leakage from below the spa	Check the connections and empty the hoses	Close or turn off empty cycle if necessary
Water Pressure Problems		
Jets surge on and off	Water level is too low	Add water to normal level
Jets are weaker than normal or do not work at all	Jet valves are partially or fully closed	Open jet valves
	Filter cartridge is dirty	See Cleaning the Filter
	Air is trapped in the pump	Open the air bleed valve on each pump's housing and allow air to bleed out of the system. Be sure to tighten each air bleed valve as soon as water starts to flow.
	The suction fittings are blocked	Remove any debris that may be blocking the suction fittings
	Gate valve is closed	Open gate valves. Note: Never operate your spa with the gate valves closed!
Air and Jets Problems		
No airstream from the jets	Air control not open	Open the control
	Jet spout opening not fixed properly	Check jet spout openings
	Jet spout opening missing	Check jets and replace as necessary
Light Problems		
Standard spa light does not work	Light bulb has burned out	Replace light bulb
	Lighting system is defective	Contact your dealer

Symptom	Possible Causes	Possible Solutions
Pump Problems		
Pump runs constantly – will not shut off	Problem with circuit board	Contact your dealer
Noisy pump	Water level is too low	Add water to normal level
	Block wall suctions or skimmer	Clean the wall suction/skimmer
	Damaged or worn-out motor block	Contact your dealer
	Clogged floor suction or skimmer	Clean floor suction or skimmer
	Leakage of air into suction line	Contact your dealer
	Debris is inside pump	Contact your dealer
	Gate valves are closed	Open gate valves. Note: Never operate your spa with the gate valves closed!
	Damaged or worn motor bearings	Contact your dealer
	Improper or defective wiring	Contact your dealer
Pump turns off during operation	Automatic timer has completed its cycle	Start the cycle again
	Pump has overheated due to the vents on the equipment door being blocked	Clear items away from vents
	The pump motor is defective	Contact your dealer
Pump has a burning smell while running	Damaged or worn motor bearings	Contact your dealer
Pump does not work	Power may be turned off	Reset power
	Pump has over heated	Let cool for one hour
	Incorrect or faulty wiring of electrical supply	Contact your dealer
	Switch is off	Auto reset after the motor has cooled down
	House circuit breaker tripped or in OFF position	Reset circuit breaker Contact your dealer
	Motor overload condition	Motor overload will reset automatically. If problem persists, contact your dealer
	Damaged electrical cord	Contact your dealer
	Pump cord not plugged in	Plug pump cord into red receptacle
	GFCI tripped or in OFF position	Reset GFCI

LIMITED WARRANTY

This Limited Warranty is extended to the original purchaser of an American roto mold spa manufactured after January 1, 2013 and installed for residential use in the United States of America and Canada.

Lifetime Guarantee Shell Structural

American roto mold spas have a lifetime guarantee against water loss due to defects in the spa shell from the original date of delivery.

Lifetime Guarantee Cabinet

American roto mold spa cabinets have a lifetime guarantee against defects in workmanship or materials from the original date of delivery. Normal wear and weathering of the finish will occur naturally over time and are not defects.

1 Year Equipment and Controls

American roto mold spa electrical equipment components – specifically limited to the pumps and control system – are warranted against malfunctions due to defects in workmanship or materials for one year from the original date of delivery.

1 Year Plumbing

American roto mold spas are warranted against leaks due to defects in workmanship or materials for one year from the original date of delivery.

Warranties for Other Components

The fuses, shell, cabinet finish, and filters are warranted to be free of defects in workmanship and material at the time of delivery. The factory installed Pure Cure water purification system is warranted against malfunction due to defects in workmanship or material for one year from the original date of delivery except the UV bulb and quartz tube. The UV bulb and quartz tube are warranted for ninety (90) days from the original date of the spa delivery. All other factory-installed components not mentioned specifically, including, but not limited to the jets, diverter valves, LED lighting systems, filter lids, and mechanical components, are warranted against malfunction due to defects in workmanship and material for one year from the original date of delivery.

Authorized Parts & Accessories

This Limited Warranty is void if the Manufacturer or its designated representative determines that the spa has been subjected to damage or failure due to installation of aftermarket parts that are not LMS-approved parts and accessories. This disclaimer includes, but is not limited to filters, UV bulbs, ozone systems, salt systems, repair parts and other accessories.

Performance

This warranty begins on the date of delivery of the spa, but in no event later than one year from the date of manufacture. To obtain service in the event of a defect covered by this Limited Warranty, notify your dealer or LMS customer service as soon as possible and use all reasonable means to protect the spa from further damage. Upon proof of purchase, a designated service representative will correct the defect subject to the terms and conditions contained in this Limited Warranty. There will be no charge for parts or labor to repair the defect, although providing access to the affected area of the repair is your responsibility as the spa owner. Freight charges for replacement parts is the responsibility of the spa owner. You may be assessed reasonable repairman travel mileage charges. In the event that the spa is removed to a repair facility for repair and reinstalled, the cost of removal and reinstallation will be your responsibility as the spa owner. If the Manufacturer determines that repair of the covered defect is not feasible, it reserves the right to provide a replacement spa instead, equal in value to the purchase price of the original spa. In such an event, reasonable costs for removal of the original spa, shipping costs from the factory for the

replacement spa and delivery and installation of the replacement will be your responsibility as the spa owner. The replacement spa will carry the balance of the original spa's warranty. Spa covers are not included. This warranty ends either by specified time frame, owner-transfer, relocation, or installation of any component other than by manufacturer.

Warranty Limitations

This Limited Warranty is void if the Manufacturer or its designated representative determines that the spa has been subjected to alteration, neglect, misuse or abuse, or freight damage caused by the common carrier; any repairs have been attempted by anyone other than a designated representative; or if the failure is caused by accident, acts of God or other causes beyond the control of the Manufacturer. Neglect, misuse and abuse include any installation, operation or maintenance of the spa other than in accordance with the instructions contained in the owner's manual provided with the spa, including but not limited to the failure to maintain proper water chemistry and chemical balance and the use of abrasive or improper cleaners or non-genuine parts and accessories. This Limited Warranty does not provide coverage for the insulating cover, any item attached to or installed on the spa after the date of manufacture, or for gaining access to any component for repair or replacement. Spa units in commercial use are excluded from any coverage whatsoever. The spa owner accepts liability for repair work performed by anyone other than the Manufacturer or a designated representative.

Limitations

The Manufacturer disclaims all warranties, expressed or implied, in fact or in law, to the extent allowed by your State's Law, including the warranty of merchantability and fitness for use, except as stated specifically herein. All warranty service must be performed by the Manufacturer or its designated representative. No agent, dealer, distributor, service company or other party is authorized to change, modify or extend the terms of this limited warranty in any manner whatsoever. The Manufacturer will not be responsible for any statements or representations made in any form that go beyond, are broader than, or are inconsistent with any authorized literature or specifications.

Disclaimers

The Manufacturer and its representatives shall not be liable for any injury, loss, cost or other damage, whether incidental or consequential, arising out of any defect covered by this limited warranty, including without limitation, loss of use of the spa and cost for removal of defective product even if the Manufacturer was advised of the possibility of damage. The liability of the Manufacturer under this limited warranty, if any, shall not exceed the original amount paid for the defective product. Coverage under this limited warranty shall commence as of the original date of delivery and the duration of such coverage shall not extend for any reason whatsoever beyond the stated time periods. These disclaimers shall be equally applicable to any service provided by the Manufacturer and its designated representatives.

Legal Rights

This Limited Warranty gives you specific legal rights. You may also have other rights that vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Locating the product serial number

The serial number of your spa is located on a metal plate attached to the inside of the door for the equipment area. You will need this number to properly register your spa and activate coverage. Write this information in the space provided below.

Spa Model: _____

Spa Serial Number: _____

Date Purchased: _____

Date Installed: _____

Dealer's Phone Number: _____

Dealer's Address: _____

LTR50001120, Rev. D
6/23/15